A P P E N D I X

I I I

ANIMAL LIFE CYCLE CENTER

[in-depth] Carcass Re-<u>Production</u> Department

The spatial layout and the program of the campus

Breeding department (Natural Habitat Simulacrum for animals)

Responsibilities:

>>Provides breeding possibilities for numerous endangered species regarding their particular needs for natural environment;

>>Possesses data of the endangered animal species and sequentially performs a reintroduction program of each of them in to the wild;

>>Provides a simulator for almost any natural environment of wildlife species with transformed spaces, water facilities, various earth formations, etc.

>>Provides a laboratory for animal reproduction;

>>Provides study facilities for animal genetic management, animal re-introduction programs, etc.

PROGRAM:

- **Evolutionary Genetics Lab** (deals with conservation breeding research, biological, genetic input in it; deals with reintroduction process of animals into the wild and their survival probabilities; includes facilities (storages, premises) necessary for fertilization) ---------- ***(to be combined with Research Department) 200-400m^2***
- **Research laboratory** (deals with and gathers global data of animal species registration, evaluates the extinction rates of certain species and lists priorities for conservation breeding programs, also deals with reintroduction process of animals into the wild and their survival probabilities)---------- ***(to be combined with RD) 200-400m^2***
- **Arrival point** for animals involved in breeding programs---------- ***100m^2***
- **Storage** for animal food and care equipment ---------- ***50m^2***
- **Veterinary service**----------***(to be combined with RD) 70m^2***
- **Technical premises**, staff facilities, utilities, etc.----------***(to be combined with RD) 50m^2***
- **Simulacrum** that is transformed or easily adapted spatial structures that involve water, ground (terrain), forest, mountains and barrens necessary to simulate natural environments for animals of breeding and reintroduction programs (for exact required measurements and spatial specificities see Appendix 1) - ***(varies) 1000-2000m^2***

Research department

Responsibilities:

>>Provides research facilities for animal health care improvement, developing medicine, etc.

>>Provides possibility to order certain species of dying animals in zoos to take specimens, etc.

PROGRAM:

- **Evolutionary Genetics Lab** (deals with conservation breeding research, biological, genetic input in it; deals with reintroduction process of animals into the wild and their survival probabilities; includes facilities (storages, premises) necessary for fertilization) ---------- ***200-400m²***
- **Medical Laboratory** (deals with animal health improvement, current issues in that industry; do tests, provides medical solutions etc.) ---------- ***200-400m²***
- **Research Laboratory I** (studies and improves the understanding of animal biology, medicine and deals with the material to work with in the lab) ---------- ***200-400m²***
- **Research laboratory II** (deals with and gathers global data of animal species registration, evaluates the extinction rates of certain species and lists priorities for conservation breeding programs, also deals with reintroduction process of animals into the wild and their survival probabilities)---------- ***200-400m²***
- **Educational department** (includes lecture rooms, study rooms, any premises necessary for an educational institution; provides education to students, holds conferences for animal researchers, scientists all over the world, etc.) ----------***1000m²***
- **Technical premises**, staff facilities, utilities, etc.---------- ***100m²***

Carcass Re-Production department

Responsibilities:

>> Provides global data of animals in zoos, their health status, aging schedules and proximity to death;

>> Provides possibility to order certain species of dying animals in zoos to be used for rouge taxidermy art;

>> Provides temporary compact shelter for the animals, veterinary services, animal euthanasia, autopsy as well as preparation of animal parts to be used in a creative workshop of taxidermy;

PROGRAM:

[U N D E R] G R O U N D

Taxonomy branch:

- **Collection, observation, measurement recording, sampling space (WET LAB), NECROPSY**: cutting open stomach cavities to remove organs, collect flesh samples, measure gonads and record stomach contents. IMPORTANT: the room has to be

connected to the **skinning room** since after the external inspection the skin of the specimen has to be removed in the preparation lab and the organs brought back to the DNA/genetics lab. Measuring station – different surfaces for untreated carcass and organs after skinning, tables for small animals. ----------***50m²***

- **A walk-in -20°C freezer** shared with prep lab. ----------***12m²***
- **Computer station (DRY LAB)/ Evolutionary Genetics Lab/ Research Offices:** DNA extraction and PCR setup, scientific investigation, recording, etc. ----------***20-30m²***
- **Sample station:**
    - **Freezers for frozen tissue samples: ultralow (-80ºC) freezer** is outfitted with custom-made racks and polycarbonate boxes. ----------***12m²***
    - **Cold room for non-frozen tissue samples:** non-frozen tissues (e.g., ethanol- or buffer-preserved) are stored in racks and boxes in a **walk-in (-4ºC) cold room**.----------***12m²***

Taxidermy branch:

- **Large preparation lab space** for preparing specimen skins and skeletons.
    - **Skinning space**: rack to hang the animal; residues/materials are put to a biohazard waste bag that is stored in **a walk-in freezer**; tools are kept in **a room for field equipment**. ----------***30m²***
    - **Preservation space (Salting)** (several days)**:**
        - **Room for salting:** salting table.----------***(skin.)***
        - **Room for drying (regulated climate):** drying boards (regulated position). ----------***20m²***
        - Salt contained in a **storage room**.
    - **Fleshing space:** fleshing beam is used, other equipment, cabinet. ----------***(skin.)***
    - **Pickling and basification room** (3 days)**:** basin for pickling solution, basin for basification, water basin to rinse the hides, cabinet for storing chemicals. --------***20m²***
    - **Mineral tanning room:** tanning barrel plastic, never metal. ----------***15m²***
    - **Drying gallery (regulated climate):** hanging racks and residue collecting drainage ponds. ----------***30m²***
- **"Bug room": Large climate-controlled chamber to keep flesh-eating insects** – beetles (dermestides). IMPORTANT: the chamber has to be isolated (firewall) for bugs not to escape out of the room. Cabinets with jars of the colonies. ----------***15m²***
- **Bone treating/cleaning room**. Washing and removing residues in solutions; brushing and drying bones. ----------***15-20m²***
- **A walk-in cold room.** ----------***12m²***
- **A walk-in -20°C freezer.**----------***12m²***
- **A room for field equipment** (+tools for construction of boxes, drilling holes in tags, etc.)----------***12m²***
- **"Bone room"**: humidity and temperature control. ----------***15m²***
- **"Fur room"**: humidity and temperature control.----------***15m²***
- **Storage room:** skins, skeletons, and other dried material are stored in insect-proof and light-proof cases.----------***12m²***

- **Additional storage facilities** are available for uncatalogued research material, catalogued material that has not yet been integrated into the collections, and specimens on loan from other institutions. In addition, **a walk-in freezer** and **chest freezer** are available for temporary storage of unprepared specimens received primarily as donations or salvage. ---------- ***12m²***
- **Waste room/ Solution storing room/ Cleaning room:** Storage room to keep reusable chemical solutions, new solutions, salt, etc. Room to clean used towels, etc., hanging them dry. Preferably close to rooms in necessity for them. ---------- ***12m²***

Other spaces:

- **Meeting room:** conferences, meetings. ---------- ***15m²***
- **Toilet/shower area.** ---------- ***6-10m²***
- **Technical premises.** ---------- ***6m²***

[I N] G R O U N D

Veterinary service:

- **Room care/hospitalization** ---------- ***30m²***
- **Pre-operating theater** ---------- ***25m²***
- **Operating theater** ---------- ***30m²***
- **X-ray** ---------- ***15m²***
- **Laboratory** ---------- ***10m²***
- **Electro** ---------- ***10m²***
- **Warehouse** ---------- ***10m²***
- **Staff area:**
    - **Office** ---------- ***20m²***
    - **Dressing room/bathroom** ---------- ***6-10m²***
    - **Kitchen, etc.** ---------- ***15m²***

Logistics department:

- **Office** ---------- ***20m²***
- **Dressing room/bathroom** ---------- ***6-10m²***
- **Kitchen, etc.** ---------- ***15m²***

[I N S I D E] G R O U N D

- **Open taxidermy gallery** ---------- ***200m²***
- **Small animal keeping premises:**
    - **Pool/aquarium** ---------- ***15m²***
    - **Terrarium 1** ---------- ***20m²***
    - **Terrarium 2** ---------- ***20m²***
- **Common space/ transition space** ---------- ***150m²***

[O V E R] G R O U N D

- **Large mammal natural park with temporary built-in pavilions (see App. 2)** -----***up to 4000m²***
- **Playground area** ---------- ***400m²***
- **Parking space**

Taxidermy Art

Responsibilities:

>>Provides spaces and possibilities for artist to work with dead animal bodies;

>>Provides possibilities for artists to order any dying zoo animal specimen from all over the world in order to perform an art project and introduce an alternative afterlife for the animal;

PROGRAM:

- **Taxidermy workshop** ---------- ***100m²***
    - Skinning can be done with the carcass hanging or lying. Generally, hanging is easier as after the initial cuts are made the skin can be pulled downwards or away from the body, thereby lessening the need to use a skinning knife. A skinning knife should be very sharp and used sparingly to decrease the chance of cutting the skin which can mar the hide. Care should also be taken to not take large amounts of fat or meat with the skin as this material will have to be removed later and can impede salt penetration when preserving (see following section). A good job in skinning will make some of the tanning steps easier.
    - Preserving. If the hide is not to be tanned immediately it must be preserved. The goal of preservation is to stop the putrefication and decay begun by bacteria immediately upon death. The main methods of preservation are salting, freezing and drying. Salting the hide to remove moisture is the most common method. In salting a hide use only non-iodized salt such as non-iodized table salt or pickling and curing salt. Rock salt should never be used as it has impurities. A fine grain salt is preferred as large grain salt will not penetrate the hide well. To salt a skin, lay it flat and pour a generous amount of salt down the middle of the hide. Use approximately one pound salt for each pound hide and rub it in thoroughly, covering every portion. Fold the hide flesh to flesh, roll it up and place it on a slanting board allowing it to drain. The following day shake off the wet salt and resalt with new salt. If the skin has finished draining it can be laid out flat to dry, which may take several days, or longer, depending upon the weather. Hides should not be dried in direct sunlight or where temperatures are very high. Once dry, the skin can be stored in a dry place until tanning.
    - To flesh a hide means to scrape all fat, meat, and membranes off the skin in preparation for the actual tanning process. Fleshing can be done before the hide is salted and some authors recommend this as the salt then penetrates the skin more easily. Conversely, other sources state that

salting, in addition to preserving the hide, makes fleshing easier. If a fresh hide is to be tanned immediately after fleshing, it does not need to be salted. Fleshing is accomplished through the use of a fleshing beam and a fleshing knife. A fleshing beam is a piece of wood over which the hide is draped and can be fashioned out of a 2"e 6" or 2" e 8" board five or six feet long. One end should be cut to a blunt point and all edges rounded and smoothed. The board is then mounted on legs so that the pointed end comes around waist high.

- Pickling and Basification. Pickling, as described by Rittel (1993), is the use of an acid solution to acidify and temporarily preserve a skin while physically and chemically preparing it for tanning. Pickling solutions are mixtures of water, salt, and acid. The pH must be carefully checked and proper precautions, i.e., use of rubber gloves, eyewear, etc., should be followed when using acids. Skins are usually left in the pickling solution for three days after which time they must be neutralized. Neutralizing raises the pH of the skin through the use of an alkaline substance such as sodium acetate, sodium formate, sodium bicarbonate or others. Neutralization is generally brief, 15 to 20 minutes, after which the skins should be rinsed with clean water and put into the tanning solution (Rittel, 1993).
- Mineral tanning can be done at home and two popular recipes are alum tanning and chrome tanning. While both recipes result in a well-tanned hide, alum tanned hides tend to sweat if atmospheric humidity becomes too high. Tanning using mineral methods also requires closer attention to the tanning process than the use of vegetable tanning solutions. The addition of chemicals, such as sulfuric or other types of acids, and solution pH levels must be carefully monitored. Rubber gloves and eye protection should be worn and care taken when mixing solutions. Tanning should be done in a plastic barrel, never in metal.

- **Technical premises, staff facilities, utilities, etc.**---------- ***100m^2***
- **Exhibition spaces** ----------***500-1000m^2***